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Prevalence of somatic symptoms amongst undergraduate medical students of Marathwada region of Maharashtra, India

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ABSTRACT

Background: The aim of medical education is to produce competent, physically and mentally strong health professionals, as they are going to be the pillars of the future health care system. Stress is one of the most common and process-oriented obstacles in medical education. It often exerts a negative effect on the academic performance, physical health, and psychological well-being of the students. Dealing with overloaded medical curriculum, competing with peers, being away from home and meeting high expectations imposed by parents and society to excel is among the common stressful transitions at this stage.

Methods: A cross-sectional descriptive study was carried out amongst 352 undergraduate medical students of a private medical college in a rural area of Maharashtra during April to October 2019. The structured questionnaire was used to record the data. Collected data was used to assess the severity of mental health issues among medical students.

Results: Majority 194 (55.11%) students were in the age of 18 to 20 years followed by 141 (40.06%) were in 21 to 23 years. There were 196 (55.68%) girl students and 156 (44.32%) boys. According to the various categories, 80 (22.73%) of the students had low stress scores, followed by 76 (21.59%) in minimal. A highly significant difference in stress scores was seen between boys and girls, which was more in boys.

Conclusions: Study concluded that undergraduate medical students perceive minimal to very high stress presented as various systems that vary with the year of study and gender wise too. There is a further need to look into the various causes of stress.

Keywords: Undergraduate medical student, Stress, Somatic, Somatoform

INTRODUCTION

The aim of medical education is to produce competent, physically and mentally strong health professionals, as they are going to be the pillars of the future health care system. If they experience any obstacle at the beginning of their career, it may impede their overall professional development or even lead to a change of profession. Stress is one of the most common and process-oriented obstacles

in medical education. It often exerts a negative effect on the academic performance, physical health, and psychological well-being of the students. The journey through medical school is a stressful and daunting task. A high level of stress is seen in medical students. In their pre-clinical year's medical students endure a stressful competitive environment with multiple demands and challenges.

Dealing with overloaded medical curriculum, competing with peers, being away from home and meeting high expectations imposed by parents and society to excel are among the common stressful transitions at this stage.⁴ As they progress to clinical years the contact with patients, diseases and death, graduation and acquiring an internship or residency position adds more stress to achieving targets.5 The combination of all of these stressors can predispose medical students to a variety of psychological disorders including depression, anxiety, somatic symptoms, and even suicidal ideation.⁶ Individuals exposed to the same stress may respond differently depending on their ability to cope and their perception of the stressor. The path of advancement for an individual is often full of challenges to which, if he rises, forms eustress. However, prolonged, continuous, and severe stress can result in psychosomatic disorders and such stress is termed as distress.⁷ About one-third of medical students worldwide suffer from depression or depressive symptoms. Besides depression, anxiety and psychosomatic disorder constitute an emerging mental health problem.8 It is well-documented fact that more than 70% of medical students present with different symptoms suggestive of psycho-somatization.9 Somatoform disorders are a group of non-psychotic conditions that contribute to patient distress and over-utilization of healthcare services. 10

Somatoform disorders are defined in international classification of diseases (ICD)-10 as 'repeated presentation of physical symptoms over a number of years, with persistent requests for medical investigations, in spite of repeated negative findings and reassurances by doctors that the symptoms have no physical basis world health organization (WHO).¹¹ Recently, the medical student population is increasing every year, especially in developing countries including India. Change in lifestyle because of urbanization and globalization coupled with high-level competition in the medical field could lead to an increase in stress and depression among medical students. Depression in younger age group may lead to serious developmental and functional consequences like an academic failure or persistent psychosocial problems. However, there are few studies conducted in developed countries to ascertain the stress as an associated factor for depression and information in this regard is lacking from developing countries like India.

Hence the present study was carried out to study the prevalence and socio-economic determinants and it correlates with somatic symptoms amongst medical undergraduate students of a private medical college in a rural area of Marathwada region of Maharashtra, India.

METHODS

A cross-sectional descriptive study was carried out amongst 352 undergraduate medical students who gave consent and willing to participate in the study of a private medical college in a rural area of Marathwada region of Maharashtra, India during period of April to October 2019.

Sample size

All 352 undergraduate medical students of all MBBS academic years present during study and those gave consent and willing to participate in study were included.

Inclusion criteria

All the students present during study period and willing to participate in the study were enrolled.

Exclusion criteria

No explicit exclusion criteria.

A pre-tested, pre-designed questionnaire which contains socio-demographic profile and somatic symptom scale (SSS-8) was used to collect the data. Data was collected anonymously, and full confidentiality was maintained. The study was approved by the institutional ethical committee.

SSS-8- enquired about symptoms like stomach or bowel problems, pain in arms, leg pain, joint pain, backache, chest pain, headaches, shortness of breath, dizziness, feeling tired or low energy and trouble sleeping during the past 7 days.¹²

Data was entered in Microsoft excel sheet and analysis was done by using percentage, proportions and chi-square test. P<0.05 considered as statically significant.

RESULTS

Table 1 shows that majority of 194 (55.11%) students were between the age of 18 to 20 years, while 141 (40.06%) were between 21 to 23 years and 17 (4.83%) were more than 24 years of age and majority 196 (55.68%) were girl students and 156 (44.32%) were boys.

Majority 255 (72.44%) of the students were from nuclear type of family and 97 (27.56%) were from a joint family.

It was seen from Table 2 that the stress scores among students to the various categories, majority 80 (22.73%) of the students had low stress scores, followed by minimal in 76 (21.59%), medium in 75 (21.31%) and very high score was seen in 67 (19.03%) students.

As Table 3 shows that the relationships between various demographic factors and stress scores. It shows that stress scores were during the early age of graduation and gets less during the latter years of age. The difference between stress score is not significant irrespective of the year of medical graduation. A highly significant difference in stress scores was seen between boys and girls, which was more in boys. There was no difference in stress scores among students in relation to the type of their families.

Table 1: Demographic characteristics of the study population.

| Demographic characteristics | Number (n=352) | Percentage (%) | | | | |
|-----------------------------|----------------|----------------|--|--|--|--|
| Age (years) | | | | | | |
| 18-20 | 194 | 55.11 | | | | |
| 21-23 | 141 | 40.06 | | | | |
| >24 | 17 | 4.83 | | | | |
| Gender | | | | | | |
| Male | 156 | 44.32 | | | | |
| Female | 196 | 55.68 | | | | |
| Batch wise | | | | | | |
| 2015 | 54 | 15.34 | | | | |
| 2016 | 67 | 19.03 | | | | |
| 2017 | 96 | 27.27 | | | | |
| 2018 | 72 | 20.45 | | | | |
| 2019 | 63 | | | | | |
| Types of family | | | | | | |
| Nuclear | 255 | 72.44 | | | | |
| Joint | 97 | 27.56 | | | | |

Table 2: Assessment of level of stress score.

| Category | Stress | Total score | | | | |
|-----------|---------|-------------|----------------|--|--|--|
| | score | No. | Percentage (%) | | | |
| Minimal | 0-3 | 76 | 21.59 | | | |
| Low | 4-7 | 80 | 22.73 | | | |
| Medium | 8 -11 | 75 | 21.31 | | | |
| High | 12 - 15 | 54 | 15.34 | | | |
| Very High | 16-32 | 67 | 19.03 | | | |

DISCUSSION

The present study was carried out to study the prevalence of somatic symptoms among medical undergraduate students in a medical college. In our study, majority 194 (55.11%) students were in the age of 18 to 20 years and 141 (40.06%) were between 21 to 23 years. Also, 196 (55.68%) were girls and 255 (72.44%) were from a nuclear type of family and 97 (27.56%) were from joint family. Similarly, a study done by Manore et al, found that most of the medical students 28 (58%) were in the age group of less than 20 years. ¹³

Table 3: Association of stress scores with demo-graphic variables.

| Demographic variables | Minin | Minimal | | Low | | Medium | | High | | Very High | |
|--------------------------|-------|---------|-----|-------|-----|--------|-----|-------|-----|-----------|-------------------------|
| | No. | % | No. | % | No. | % | No. | % | No. | % | |
| Age (Year) | | | | | | | | | | | |
| 18-20 | 34 | 17.53 | 42 | 21.65 | 39 | 20.10 | 31 | 15.98 | 48 | 24.74 | 18.00 - 0.021 - S |
| 21-23 | 34 | 24.11 | 36 | 25.53 | 31 | 21.99 | 22 | 15.60 | 18 | 12.77 | |
| >24 | 08 | 47.06 | 02 | 11.76 | 05 | 29.41 | 01 | 5.88 | 01 | 5.88 | |
| Total | 76 | | 80 | | 75 | | 54 | | 67 | | |
| Batchwise | | | | | | | | | | | |
| 2015 | 13 | 24.07 | 08 | 14.81 | 17 | 31.48 | 10 | 18.52 | 06 | 11.11 | 25.92 0.055 NS |
| 2016 | 24 | 35.82 | 17 | 25.37 | 09 | 13.43 | 07 | 10.45 | 10 | 14.93 | |
| 2017 | 16 | 16.67 | 25 | 26.04 | 17 | 17.71 | 17 | 17.71 | 21 | 21.88 | |
| 2018 | 15 | 20.83 | 16 | 22.22 | 19 | 26.39 | 10 | 13.89 | 12 | 16.67 | |
| 2019 | 08 | 12.70 | 14 | 22.22 | 13 | 20.63 | 10 | 15.87 | 18 | 28.57 | |
| Gender | _ | | _ | | | | | | - | | |
| Male | 23 | 11.73 | 35 | 17.86 | 43 | 21.94 | 43 | 21.94 | 52 | 26.53 | 50.20 0.00 |
| Female | 53 | 33.97 | 45 | 28.85 | 32 | 20.51 | 11 | 7.05 | 15 | 9.62 | |
| Total | 76 | | 80 | | 75 | | 54 | | 67 | | HS |
| Types of family | | | | | | | | | | | |
| Nuclear | 53 | 20.78 | 53 | 20.78 | 54 | 21.18 | 43 | 16.86 | 52 | 20.39 | 4.11 0.390 NS |
| Joint | 23 | 23.71 | 27 | 27.84 | 21 | 21.65 | 11 | 11.34 | 15 | 15.46 | |
| Total | 76 | | 80 | | 75 | | 54 | | 67 | | |

(S-significant, NS-not significant, HS-highly significant)

In the present study, 80 (22.73%) of the students had lowstress score, followed by minimal in 76 (21.59%), medium in 75 (21.31%) and very high score was seen in 67 (19.03%). Similarly a study by Manore et al, revealed among 1175 students of which 393 from a medical background and 792 was from science university, it was observed that medical students as compared to nonmedical have to deal with the characteristic of disease throughout their life and has to read about it.¹³ A study conducted by Adhikari A et al, among medical students found that a significantly higher percentage of female students reported medium to highly severe somatic symptoms (30.4% versus 14.9%). Among male students, the headache was the most frequent complaint followed by pain in arms and legs and in female's menstrual cramps and headache.⁸ These finding was similar to our study. A study by Rueckert et al, revealed that 73 (43.7%) students

had stressful life events and displayed troubles adjusting to them and 63 (61.2%) were wondering whether it could happen again and 73 (70.9%) tried to suppress their feelings. ¹⁴ In a study by Eva et al, a total of 990 (73%) out 1,363 medical students the overall prevalence of the stress was 53% in males and 55% in females. ¹⁵

In our study, it was observed that when students enter the undergraduate scores, they are new to medical college and have to cop up with a new environment hence stress scores were high during the early age of graduation than latter years. The stress scores are distributed in a similar pattern in all years of the Bachelor of medicine and bachelor of surgery (MBBS) course. A highly significant difference of stress scores was among boys. There was no difference in stress scores among students in relation to the type of their families. In a study by Behere et al, it was found that the stress appears to be a universally prevalent entity in all students, regardless of their age, sex, education, parent's occupation, and presence or absence of role model.⁷ However, it is apparent that equivalent numbers of medical and engineering students have shown denial to the existence of problems, while most of the nursing students have shown a denial of their problems. It may be that longer duration of the study and greater duration required to complete professional degree, coupled with higher expectations from parents of the same background serving as role models poses a greater degree of stress on medical and engineering students than nursing students. Similarly in a study by Dutta et al, also found that higher age-group, year of studying, the vastness of the academic curriculum, fear of poor performance in the examination, lack of loneliness. recreation. family problem, accommodation away from home were important determinants of perceived stress.¹⁶ A study by Rock et al, found that out of 250 students, 1.2% of the second year student experience severe stress in academic related stressors, 1.6% of stress in intra-personal and interpersonal issues, 0.8% of final year student experience severe stress in teaching and learning-related methods.¹⁷

Limitations

Being a cross-sectional and single centre study, so it cannot be generalized to all other medical college students.

CONCLUSION

Present study concluded that medical students perceive minimal to very high stress presented as various systems that vary with the year of study and gender-wise too. There is a further need to look into the various causes of stress. Also, it was observed that when students enter the undergraduate scores, they are new to medical college and have to cop up with the new environment hence stress scores were high during the early age of graduation than latter years. The stress scores are distributed in a similar pattern in all years of the MBBS course. The highly significant difference in stress scores was among boys.

There was no difference in stress scores among students in relation to the type of their families.

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REFERENCES

- 1. Mosley TH Jr, Perrin SG, Neral SM, Dubbert PM, Grothues CA, Pinto BM. Stress. Coping and wellbeing among third-year medical students. Acad Med. 1994;69:765-67.
- 2. Mac Lean L, Booza J, Balon R. The impact of medical school on student's mental health. Acad Psychiatry. 2016;40:89-91.
- 3. Moffat KJ, McConnachie A, Ross S, Morrison JM. First-year medical student stress and coping in a problem-based learning medical curriculum. Med Educ. 2004;38:482-91.
- 4. Pagnin D, de Queiroz V. Comparison of quality of life between medical students and young general populations. Educ Health. 2015;28:209-12.
- Ibrahim N, Al-Kharboush D, El-Khatib L, Al-Habib A, Asali D. Prevalence and Predictors of anxiety and depression among female medical students in King Abdulaziz University, Jeddah, Saudi Arabia. Iran J Public Health. 2013;42:726-36.
- 6. Vankar JR, Prabhakaran A, Sharma H. Depression and stigma in medical students at a private medical college. Indian J Psychol Med. 2014;36:246-54.
- 7. Behere SP, Yadav R, Behere PB. A comparative study of stress among medicine, engineering, and nursing students. Indian J Psychol Med. 2011;33:1458.
- 8. Adhikari A, Dutta A. Prevalence of poor mental health among medical students in Nepal: A cross-sectional study. BMC Med Educ. 2017;17:232.
- 9. Roger C. Imagined illnesses can cause real problems for medical students. CMAJ. 2008;25(178):820.
- 10. De Waal MWM, Arnold IA, Eekhof JAH. Follow-up study on health care use of patients with somatoform, anxiety and depressive disorders in primary care. BMC Family Practice. 2008;9:5.

- World Health Organization (2004). ICD-10: International statistical classification of diseases and related health problems: Tenth revision, 2nd ed. World Health Organization. https://apps.who.int/iris/handle/10665/42980. Accessed on 15th April, 2019.
- Gierk B, Kohlmann S, Kroenke K, Spangenberg L, Zenger M, Brähler E et al. The Somatic Symptom Scale-8 (SSS-8): A Brief Measure of Somatic Symptom Burden. JAMA Internal Med. 2014;174(3):399-407.
- 13. Manore S, Makade KG, Umate L, Pandey P. Somatic symptom disorder (SSD) among medical students with DSM–V. Int J Psychol. 2017;4(2):39-43.
- Rueckert KK, Ancane GA. cross-sectional study among Medical Students in Latvia: Differences in mental symptoms and somatic symptoms among Latvian and International Students. Papers on Anthropol. 2018;27:47-54.

- 15. Eva EO, MZ, Mosaddek ASM, Rahman MF, Rozario RJ. Prevalence of stress among medical students: A comparative study between public and private medical schools in Bangladesh. BMC Res Notes. 2015;8:327.
- Dutta AR, Raja JD. Stress and Stressors among Medical Undergraduate Students: A Cross-sectional Study in a Private Medical College in Tamil Nadu. Indian J Community Med. 2017;42(4):222-25.
- 17. Rock B, Ronald R. Prevalence of stress and its risk factors among medical students. Int J Community Med Pub Health. 2017;4(12):4589-94.

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